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EXAMINER

AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 02/13/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/762,677

Applicant(s)

COURT ET AL.

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Acknowledgement of Applicant's Amendments***

1. The amendment filed November 18, 2002 was not signed. A copy of the signed amendment requested by Examiner on January 27, 2002 was received via fax on January 29, 2002.
2. The cancellation of the Abstract and the new Abstract given on page 20 of Applicant's Amendment (Paper # 9) have been received and considered by Examiner.
3. The amendments made in Claims 1-19 given on pages 1-4 and 15-19 of Applicant's Amendment (Paper # 9) have been received and considered by Examiner.
4. The addition of new Claims 21-23 given on page 5 of Applicant's Amendment (Paper # 9) have been received and considered by Examiner.

### ***Information Disclosure Statement***

5. Examiner confirms that a proper IDS was filed on June 19, 2001. Examiner acknowledges Applicant's statement that Applicant did not intend to provide an IDS via the listing of references in the specification on page 6 of Paper #9.

### ***WITHDRAWN OBJECTIONS***

6. The objection to the Abstract made of record in paragraph 2 of Paper #6 has been withdrawn due to Applicant's amendments in Paper #9.

### ***WITHDRAWN REJECTIONS***

7. The 35 U.S.C. 112 rejection of claims 1, 8, 9, 11-19, of record in Paper #6, pages 3-5, paragraph 4 has been withdrawn due to Applicant's amendments. The 35 U.S.C. 112 rejection

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of claims 1 and 9 in regard to the term “semicrystalline” have been withdrawn due to Applicant’s arguments in Paper #9, page 7.

8. The 35 U.S.C. 103 rejection of claims 13 and 15 over Witschard in view of Rober et al. have been withdrawn due to Applicant’s amendments and have been replaced with the new 35 U.S.C. 103 rejection of claims 13 and 15 over Witschard in view of Rober et al. provided in this action.

### ***REPEATED REJECTIONS***

9. The 35 U.S.C. 112 rejection of claim 10 is repeated for the reasons previously of record in paragraph 4 of Paper #6.

10. The 35 U.S.C. 112 rejection of claim 20 is repeated for the reasons previously of record in paragraph 4 of Paper #6; the term “characterized” does not conform with U.S. practice.

11. The 35 U.S.C. 103 rejection of claims 1, 2, 8-11, 16 and 18 over Witschard in view of Rober et al. is repeated for the reasons previously of record in Paper #6, pages 5-7, paragraph 7.

12. The 35 U.S.C. 103 rejections of claims 3-5 over Witschard in view of Rober et al. and in further view of Lorek is repeated for the reasons previously of record in Paper #6, pages 8-10, paragraphs 8-10.

13. The 35 U.S.C. 103 rejections of claims 6 and 7 over Witschard in view of Rober et al. and in further view of Bayard et al. is repeated for the reasons previously of record in Paper #6, pages 10-11, paragraph 11.

14. The 35 U.S.C. 103 rejections of claims 12 and 14 over Witschard in view of Rober et al. and in further view of Tsutsumi et al. is repeated for the reasons previously of record in Paper #6, pages 11-12, paragraph 12.

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15. The 35 U.S.C. 103 rejections of claim 17 over Witschard in view of Rober et al. and in further view of Drzewinski is repeated for the reasons previously of record in Paper #6, pages 12-13, paragraph 13.

16. The 35 U.S.C. 103 rejections of claims 19 and 20 over Witschard in view of Rober et al. and in further view of Lorek is repeated for the reasons previously of record in Paper #6, pages 13-15, paragraph 14.

### ***NEW OBJECTIONS***

17. The abstract of the disclosure is objected to because "in inner layer" should be "an inner layer". Also, the last three lines of the abstract must be written in sentence form; these lines are introduced without any bridge between these three lines and the first six lines of the abstract. Correction is required. See MPEP § 608.01(b).

### ***NEW REJECTIONS***

#### ***Claim Rejections - 35 USC § 112***

18. Claims 2-7 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claims 2-5, the phrase "with a polyamide matrix" is indefinite. It is unclear whether the "polyamide matrix" recited in this phrase is the same polyamide or polyamide/polyolefin blend recited before "with a polyamide matrix" or if the "polyamide matrix" is a material distinct from the polyamide or polyamide/polyolefin blend recited before "with a polyamide matrix".

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In regard to claims 6, 7 and 10, the term "optionally" renders the claims indefinite since the metes and bounds of the claim cannot be ascertained.

***Claim Rejections - 35 USC § 103***

19. Claims 13, 15 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witschard in view of Rober et al.

Witschard and Rober et al. teach the tube as discussed in paragraph 7 of Paper #6. In regard to claims 13 and 15, the polybutadiene block taught by Witschard is a polydiene (col. 7, line 19), and the methyl methacrylate block taught by Witschard is an alkyl (alkyl) acrylate.

In regard to claim 21, Witschard teaches the use of vinyl halide polymers derived from polymerization of two, three or more different vinyl halide monomers (col. 4, lines 41-44). Witschard and Rober et al. fail to teach that the fluororesin is a copolymer of VF<sub>2</sub> (vinylidene fluoride) and at least one of chlorotrifluoroethylene, hexafluoropropylene, trifluoroethylene or tetrafluoroethylene. Rober et al., however, teach that the polyvinylidene fluoride of the mixture of polyvinylidene fluoride and acrylate copolymer of Rober et al. can be a copolymer based on vinylidene fluoride which contains up to 40% by weight of other monomers such as trifluoroethylene (col. 3, lines 17-22). Therefore, one of ordinary skill in the art would have recognized to have included trifluoroethylene as a comonomer in the vinyl halide polymer of Witschard et al. since it is notoriously well known to one of ordinary skill in the art to use a copolymer of polyvinylidene fluoride and trifluoroethylene as the material of the inner layer of a fuel tube as taught by Rober et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included trifluoroethylene as a comonomer in the vinyl halide polymer of

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Witschard et al. since it is notoriously well known to one of ordinary skill in the art to use a copolymer of polyvinylidene fluoride and trifluoroethylene as the material of the inner layer of a fuel tube as taught by Rober et al.

In regard to claim 22, Witschard et al. teach that the polydiene "B block" is polybutadiene (col. 7, line 19). Note that the recitation "optionally partially or completely hydrogenated" is not a positive limitation, due to the recitation of "optionally".

In regard to claim 23, Witschard et al. teach that the alkyl (alkyl) acrylate "A block" is a homopolymer or copolymer of methyl methacrylate (col. 7, lines 12-29).

#### ***ANSWERS TO APPLICANTS ARGUMENTS***

20. Applicant's arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claims 1, 2, 8-11, 13, 15, 16 and 18 over Witschard in view of Rober et al. (paragraph 7, Paper #6) have been fully considered but are not persuasive.

In response to Applicant's arguments that the methyl methacrylate-butadiene-styrene (MBS) copolymer taught by Witschard is not a triblock copolymer (page 8 of Paper #9), the claims do not differentiate the chemical structure of the ABC triblock copolymer as claimed by Applicant from the chemical structure of the MBS copolymer taught by Witschard. The chemical structure of the core shell arrangement taught by Witschard and pointed out by Applicant where "methyl methacrylate is grafted onto both butadiene and styrene blocks, still resulting in a core-shell arrangement, with methyl methacrylate forming a shell around the styrene butadiene core, grafted to both materials" (page 8, lines 18-20 of Paper #9) is "an ABC triblock copolymer with three blocks A, B and C being linked together in this order, each block being either a homopolymer or a copolymer obtained from two or more monomers, the A block

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being linked to the B block and the B block to the C block” as claimed in claim 1, where the methyl methacrylate block is the A block, the butadiene block is the B block and the styrene block is the C block. The B block (butadiene) is linked to the C block (styrene), where the B and C blocks constitute the “core”, and the “shell” A block “methyl methacrylate” is linked to the B block as Applicant admits that “methyl methacrylate is grafted onto both butadiene and styrene blocks” and as previously made of record that “one of ordinary skill in the art would recognize that the polymerization of methyl methacrylate in the presence of a polybutadiene-styrene polymer would result in poly(methyl methacrylate) chains grafted onto the butadiene and/or styrene blocks” (sentence bridging pages 6 and 7 of Paper #6). The MBS copolymer having the core-shell arrangement taught by Witschard is indeed a triblock polymer as the MBS copolymer consists of three types of monomer blocks, as is consistent with Examiner’s interpretation of the term “ABC triblock copolymer” provided in paragraph 6 of Paper #6, contrary to Applicant’s assertion that the MBS copolymer “is unrelated to a triblock copolymer” (page 8, line 14, Paper #9). Examiner maintains the argument made in the sentence bridging pages 6 and 7 of Paper #6, that one of ordinary skill in the art would recognize that the polymerization of methyl methacrylate in the presence of a polybutadiene-styrene polymer would result in poly(methyl methacrylate) chains grafted onto the butadiene and/or styrene blocks, and Examiner refutes Applicant’s assertion that the polymerization of methyl methacrylate in the presence of a polybutadiene-styrene polymer “does not result in an ABC triblock polymer as claimed” (page 9, lines 4-5 of Paper #9) for the reasons provided beforehand in this paragraph. Furthermore, graft copolymers are regarded as a type of block copolymer as evidenced by the enclosed excerpt (page 14) of *Fundamentals of Polymer Science*; therefore, the MBS polymer of Witschard,



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which consists of “methyl methacrylate [is] grafted onto both butadiene and styrene blocks” as admitted by Applicant, is a triblock copolymer.

Applicant’s discussion regarding the “block polymer component” (page 9, line 6 – page 10, line 18 of Paper #9 taught by Witschard is irrelevant because the “block polymer component” is not relied upon in the rejection (paragraph 7, Paper #6). The “MBS Polymer Component” of Witschard (col. 7, lines 4-55; also referred to as the “methacrylate polymer”, col. 3, lines 54-55) is the polymer upon which Examiner bases the rejection, not the “Block Polymer Component” of Witschard (col. 7, line 57 – col. 10, line 5). The MBS polymer (methacrylate polymer) is an ABC triblock copolymer as claimed by Applicants.

Rober et al. is relied upon for its teaching of a multiplayer pipe having a layer containing a mixture of polyvinylidene fluoride and acrylate copolymer and a polyamide layer. Rober et al. is not relied upon to teach a blend of a fluororesin with an ABC triblock copolymer as Witschard et al. teach a blend of a fluororesin with an ABC triblock copolymer. Therefore, Applicant’s argument that “block polymers are combined with the polyamide layer (component I) and are not taught for combination with the acrylate copolymer and polyvinylidene fluoride mixture” is irrelevant since Rober et al. is not relied upon for a teaching of the triblock ABC copolymer. Applicant’s argument that Rober et al. teach that “the acrylate copolymer is combined with the polyvinylidene fluoride is other than a block material” is also irrelevant since Witschard et al. teach a blend of a fluororesin with an ABC triblock copolymer. In response to Applicant’s piecemeal analysis of the references, it has been held that one cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references. *In re Keller*, 208 USPQ 871 (CCPA 1981).

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21. Applicant's arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claim 3 over Witschard in view of Rober et al. and in further view of Lorek (paragraph 8, Paper #6) have been fully considered but are not persuasive.

In response to Applicant's argument that Lorek "fails to teach or suggest a triblock copolymer" is irrelevant because Lorek is not relied upon for a teaching of a triblock copolymer. As Applicant acknowledges in Paper #9, Lorek teaches a an adhesion binder for polyvinylidene fluoride which comprises a derivative of poly(methyl methacrylate) as previously made of record in paragraph 8 of Paper #6.

22. Applicant's arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claims 4 and 5 over Witschard in view of Rober et al. and in further view of Lorek (paragraphs 9 and 10, Paper #6) have been fully considered but are not persuasive.

Applicant's arguments rely entirely on Applicant's arguments against the 35 U.S.C. 103 rejection of claims 1, 2, 8-11, 13, 15, 16 and 18 over Witschard in view of Rober et al. (paragraph 7, Paper #6), which have been addressed above in this Office Action (paragraph 20).

23. Applicant's arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claims 6 and 7 over Witschard in view of Rober et al. and in further view of Bayard et al. (paragraph 11, Paper #6) have been fully considered but are not persuasive.

In response to Applicant's argument that "it is not seen that patentees actually exemplify the preparation of an ABC triblock polymer, instead exemplifying ABA triblock copolymers", Bayard et al. nonetheless disclose that it is possible to obtain triblock copolymers of ABC type (col. 6, lines 6-8) and Bayard et al. clearly disclose that both ABC and ABA triblock copolymers can be prepared (col. 6, lines 26-27). In response to Applicant's argument that "patentees in no

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way suggest that the triblock copolymer could be combined with a fluoropolymer such as PVDF, and used to form a tube”, Bayard et al. is not relied upon to teach the combination of a triblock copolymer with a fluoropolymer such as PVDF, since Witschard teaches this combination. Rather, Bayard et al. is relied upon to teach that it would have been obvious to one of ordinary skill in the art at the time the invention was made that the ABC triblock copolymer (which is the ABC triblock copolymer of Witschard, since Bayard et al. teach that the blocks are chosen from methacrylic blocks and nonacrylic vinyl monomer blocks such as butadiene and styrene as previously made of record in paragraph 11 of Paper #6) contains BC diblock copolymer and C homopolymer (in the case of claim 6) or AB diblock copolymer and A homopolymer (in the case of claim 7), provided the appropriate polymerization conditions as previously made of record in paragraph 11 of Paper #6). Since Bayard et al. is not relied upon to teach the combination of the triblock copolymers of Bayard et al. with the materials of Witschard or the tube of Rober, Applicant’s argument that “there is insufficient motivation for one of ordinary skill in the art to combine the disclosure of the triblock polymers therein with, for example, the materials of Witschard or the tube of Rober” is irrelevant. The motivation to combine lies in the fact that Witschard and Bayard et al. both disclose methacrylic-butadiene-styrene triblock copolymers.

24. Applicant’s arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claims 12 and 14 over Witschard in view of Rober et al. and in further view of Tsutsumi et al. (paragraph 12, Paper #6) have been fully considered but are not persuasive.

In response to Applicant’s argument that “patentees do not teach an ABC triblock copolymer”, Tsutsumi et al. is not relied upon to teach an ABC triblock copolymer.

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Applicant's arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claim 17 over Witschard in view of Rober et al. and in further view of Drzewinski (paragraph 13, Paper #6) have been fully considered but are not persuasive.

In response to Applicant's argument that "the patent does not disclose triblock copolymers", Drzewinski is not relied upon to teach a triblock copolymer. Rather, Drzewinski is relied upon to teach that syndiotactic PMMA having a glass transition temperature of from 120 to 140°C is miscible as a component of polymer blends as previously made of record in paragraph 13 of Paper #6.

25. Applicant's arguments in Paper #9 regarding the 35 U.S.C. 103 rejection of claims 19 and 20 over Witschard in view of Rober et al. and in further view of Lorek (paragraph 14, Paper #6) have been fully considered but are not persuasive.

Applicant's arguments rely entirely on Applicant's arguments against the 35 U.S.C. 103 rejection of claims 1, 2, 8-11, 13, 15, 16 and 18 over Witschard in view of Rober et al. (paragraph 7, Paper #6), and the 35 U.S.C. 103 rejection of claims 3-5 over Witschard in view of Rober et al. and in further view of Lorek (paragraphs 8, 9 and 10, Paper #6), which have been addressed above in this Office Action (paragraphs 21 and 22).

### ***Conclusion***

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

wba  
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WPA

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

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